



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,715	09/25/2003	Heume Il Back	049128-5116	6368
9629 7590 11/28/2007 MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			EXAMINER BECK, ALEXANDER S	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/669,715	Applicant(s) BAEK, HEUME IL	
	Examiner Alexander S. Beck	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Acknowledgment is made of the amendment filed Sept. 4, 2007, in which claim 9 is amended and the rejections of the claims are traversed. Claims 1-17 are currently pending and an Office action on the merits follows.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,222,512 to Tajima et al. ("Tajima").

As to claim 9, Tajima discloses a driving method of a liquid crystal display (e.g., an intra-frame time-division multiplexed liquid crystal display), which is driven by a frame divided into first and second fields (e.g., a plurality of sub-frames) (Tajima, col. 12, ll. 19-46). The method comprises the step of implementing a first picture in the first field in a first area of the liquid crystal display (e.g., a first sub-frame associated with a first luminance level is displayed on a first area of the display) (Tajima, col. 12, ll. 19-46). The method also comprises the step of implementing a second picture of the second field in a second area of the liquid crystal display such that a brightness level of the second picture has a different brightness level than a brightness level of the first picture (e.g., a second sub-frame associated with a second luminance level, different from the first luminance, is displayed on a second area of the display, wherein the second area of the display is the same as the first area of the display) (Tajima, col. 12, ll. 19-46). Furthermore, the implementation of the second picture is in accordance with a type of

image of the second picture (e.g., the second picture is a higher luminance level sub-frame image than the first sub-frame image) (Tajima, col. 12, ll. 19-46).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-8, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admission of prior art ("Aapa") in view of U.S. Patent No. 5,936,608 to Springer ("Springer"), U.S. Patent No. 6,778,160 to Kubota et al. ("Kubota") and U.S. Patent No. 6,697,250 to Kuo ("Kuo").

As to claims 1 and 7, Aapa discloses a liquid crystal display in Figures 1 and 2, comprising: a liquid crystal display panel (6) having a liquid crystal cell (Clc) at each intersection area of gate lines (GLm) and data lines (DLn); an interface part (2) for receiving the data provided by a computer (12); a timing controller (4) realigning the data; a data driver (8) supplying the realigned data to the data lines; and a gate driver (10) supplying a scan pulse to the gate lines (Aapa, ¶¶ [0003-0010]).

Aapa does not disclose expressly the computer providing data and position data for a specific area; a video processor for generating processed data for the specific area from the position data and the data such that the brightness level of the processed data for the specific area is different than the brightness level of the data; a memory temporarily storing the processed data; the timing controller realigning the processed data; the data driver supplying the processed data to the data lines; or a position designator designating the specific area of the liquid crystal display panel where the processed data is implemented.

Springer discloses a computer (100) in Figure 2 for providing data and position data for a specific area of a display panel (80) (wherein position data is inherently suggested in the addressing of images to be displayed); a video processor (150) for generating processed data for the specific area from the position data and the data such that the brightness level of the processed data for the specific area is different/higher than the brightness level of the data; a memory (155) temporarily storing the processed data; and a position designator (145) designating the specific area of the liquid crystal display panel where the processed data is implemented (Springer, col. 4, l. 29 – col. 5, l. 42; see also col. 6, ll. 15-34).

In order to establish obviousness under 35 U.S.C. 103, it must appear that state of relevant prior art was such that claimed invention would have been obvious to one of ordinary skill in the art. In judging the “ordinary level of skill” in the art, it is the level of skill of those who normally attack the problems of the art that counts, and those who do most of the problem solving in the art involved are graduate engineers; as such they are chargeable with certain general knowledge concerning the principles of engineering, outside the narrow field involved, and with the skills, ingenuity and competence of the average professional engineer. *Mueller Brass Co. v. Reading Industries, Inc.*, 176 U.S.P.Q. 361,369 (E.D.Pa., 1972).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Aapa such that the computer comprised the video processor, memory and position designator of Springer for generating processed data for a specific area from position data and image data such that the brightness level of the processed data for the specific area is different than the brightness level of the data, as taught/suggested by Springer, wherein the data is applied to the display panel through the timing controller and data drivers, as taught/suggested by Aapa. The suggestion/motivation for doing so would have been because increasing the brightness of selective visual objects on a display with respect to other visual objects will

highlight which control or application area the computer system user is currently focused on, and therefore enhance both information management and user interaction (Springer, col. 2, ll. 44-61).

Moreover, it would have been within the purview of one of ordinary skill in the art that the selective brightness control method above is not limited to the display technology disclosed in Springer, but may be applied to liquid crystal displays as well. For example, Kubota discloses a method of selectively varying the brightness of arbitrary and different pixels in a liquid crystal display by changing a grayscale value associated with each pixel (Kubota, Fig. 7; see also col. 10, l. 58). Thus, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the teachings of Aapa and Springer such that the brightness adjustment of various pixels in a liquid crystal display was achieved through grayscale data modification, as taught/suggested by Kubota. The suggestion/motivation for doing so would have been to adjust the brightness of select pixels in a display when separate light sources are not provided for each pixel.

Kuo discloses a liquid crystal display computer, wherein the motherboard and computer is provided within the liquid crystal display (Kuo, Fig. 1; see also col. 3, ll. 17-25). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the teachings of Aapa, Springer and Kubota such that the liquid crystal display and computer were integrated together such that the computer was provided within the liquid crystal display, as taught/suggested by Kuo. As such, each and every device claimed above is provided within the liquid crystal display. The suggestion/motivation for doing so would have been to realize a more compact personal computing system with a display, as one of ordinary skill in the art would appreciate.

As to claim 2, Springer further discloses wherein the position designator (145) designates the specific area in accordance with a program in a computer system (Springer, col. 4, l. 29 – col. 5, l. 42; see also col. 6, ll. 15-34).

As to claim 3, Springer further teaches/suggests wherein the memory (155) temporarily stores position data for the specific area. This teaching is inherently suggested in the disclosure of Springer given that the modified display data corresponding to visual objects at an increased brightness are stored in the memory (Springer, col. 4, l. 29 – col. 5, l. 42; see also col. 6, ll. 15-34).

As to Claim 4, neither Aapa, Springer, Kubota nor Kuo discloses expressly wherein the video processor is comprised of a multiplexor. However, the examiner takes Official Notice that the use of multiplexing circuitry in video processors is old and well known in the art. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the teachings of Aapa, Springer, Kubota and Kuo such that the video processor comprised of a multiplexor. The suggestion/motivation for doing so would have been because incorporating a multiplexor into a video processor would significantly reduce the cost production, as a multiplexor enables multiple sources of data to be transmitted over a single channel (versus providing a dedicating channel for each source of data), as one of ordinary skill in the art would appreciate.

As to claim 5, all of the claim limitations have already been discussed and met by Aapa, Springer, Kubota and Kuo, as detailed in the above paragraphs with respect to claims 1 and 7.

As to claims 6 and 8, all of the claim limitations have already been discussed and met by Aapa, Springer, Kubota and Kuo, as detailed in the above paragraphs with respect to claim 7.

As to claims 10 and 14, Aapa as modified by Springer, Kubota and Kuo teaches/suggests wherein the memory is connected between the video processor and a timing controller (Aapa, Fig. 1) (Springer, col. 4, l. 60 – col. 5, l. 8). For example, as noted in the above discussion with respect to claims 1 and 7, the interface part of Aapa comprising the video processor, memory and position designator of Springer connects with the timing controller (4) for sequentially displaying data on the panel (6).

4. Claims 11-13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aapa, Springer, Kubota and Kuo as applied to claims 1-8, 10 and 14 above, and further in view of Tajima.

As to claims 11-13 and 15-17, Springer further discloses wherein the memory (155) stores data and processed data to display an image on the display panel (Springer, col. 4, l. 29 – col. 5, l. 42; see also col. 6, ll. 15-34). Neither Aapa, Springer, Kubota nor Kuo disclose expressly wherein a frame of image data stored in the memory includes at least two fields; wherein each of the two fields correspond to a different brightness level; or wherein at least one of the two fields stores black data, except for a specific area having a different brightness level.

Tajima discloses a liquid crystal display device comprising a memory (71), wherein a frame of image data stored in the memory includes at least two fields; wherein each of the two fields correspond to a different brightness level; or wherein at least one of the two fields stores black data, except for a specific area having a different brightness level (Tajima, col. 12, ll. 19-46). At the time the invention was made, it would have been

obvious to a person of ordinary skill in the art to further modify the teachings of Aapa, Springer, Kubota and Kuo such that the frame memory stored first and second fields corresponding to a single frame of image data, as taught/suggested by Tajima. The suggestion/motivation for doing so would have been to achieve a display device that prevents prominent image defects, such as flicker, and affords a high-quality image display (Tajima, Abstract).

Response to Arguments

5. Applicant's arguments filed Sept. 4, 2007, with respect to claim 9 have been fully considered but they are not persuasive. A more detailed rejection of claim 9 is provided above in paragraph 2, and it is the examiner's position that Tajima reads on the broadest reasonable interpretation of claim 9 for at least those reasons.

6. Applicant's arguments with respect to claims 1-8 and 10-17 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander S. Beck whose telephone number is (571) 272-7765. The examiner can normally be reached on M-F, 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

asb

Nov. 20, 2007


SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER